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Gymnasium Hand Book

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Hunting, William Walter,

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Date _____ No. _____

REGULATIONS

APR. 8. LOCKER a RULES

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CLASS
H.A.

Lockers are assigned in the physical director's office upon presentation of a receipt showing gymnasium membership.

Members who wish to retain the same locker from year to year must present to the physical director a receipt of membership on or before the date of its expiration each year, otherwise the locker is forfeited.

Any difficulty with locks should be reported to the gymnasium office immediately and injury to the locker be avoided.

Money, watches and other valuables must not be left in the lockers, bathroom, or locker room, but at the check room; otherwise this institution does not hold itself responsible for them.

Articles found in locker, bathrooms, or gymnasium should be left for identification at the physical director's office.

GYMNASIUM FLOOR During class hours the floor is for the exclusive use of the class.

Members not exercising will be regarded as visitors.

Visitors require special permission from the director's office to go on the gymnasium floor.

Dangerous feats should not be attempted unless under the immediate direction of an instructor.

Rubber-soled shoes must always be worn on the gymnasium floor.

GYMNASIUM COSTUME All members exercising at class hours are expected to wear the regulation suit.

The wearing of torn, soiled or otherwise improper costume is not permitted on the gymnasium floor.

Gymnasium clothing and shoes should be marked for identification.

USE OF APARATUS All movable apparatus to their places after

Medicine balls must not be used on the pulley weights or the basketball stands.

Basketballs and other apparatus are to be used by the few to the exclusion of the many.

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SUGGESTIONS TO NEW MEMBERS

PHYSICAL EXAMINATION A thorough physical examination is given preliminary to exercise in the physical department. On the basis of this examination, advice is given as to exercise and other hygienic habits.

PRESCRIPTION Ascertain from the physical director what exercises are best adapted to your needs. Avoid exercises not approved by the physical director. Read carefully the instructions given by the director in this handbook.

PRACTICE Follow faithfully any special prescription if you would obtain results. Deformity, debility and disease are the product of *years of carelessness*. Symmetry, strength and health must be the product of months at least of *care*. Take the systematized work done in one of the regular classes.

REGULARITY Be *regular* in your exercise, eating, sleep, recreation, and all other hygienic habits. There is physiological economy in it. Irregularity and lack of system will lose you half the possible results. "How use doth breed a habit in a man."

BEGINNERS To avoid *soreness*. *The first day*, take not more than a half hour of very light exercise. *The first week*, take in all three half hours on three several days. Increase gradually in amount and vigor of the exercise. The best thing for *soreness* is more light exercise, and massage if practicable.

COLDS *Exercise does not develop colds. That which you do after exercise is responsible for them.* Do not stand around long after exercise before your bath. Avoid drafts and sudden cooling when in a perspiration. Use a graded bath. During cold weather make a point of spending a few minutes in the building after dressing. Protect the chest well and breathe through the nose when you go out of doors.

HYGIENIC HABITS Diet, rest and exercise are alike responsible for health. Study the laws governing each and work out the scheme of living best *adapted to your own case*. No one set of rules can be stated for all.

NOTE — Fuller suggestions are to be found under the headings. "Personal Hygiene," "Exercise," and "Prescription."

PERSONAL HYGIENE

Emphasize items checked (✓)

"The first requisite to success in life is to be a good animal." Health, strength and vitality do not come by chance, but by obedience to natural laws. Study health. Select at least a half-dozen principles which you will obey, and hold to them rigidly. Form at least so many correct life habits. No universal rules will apply absolutely to all. There must be adaptation to individual peculiarities, but the cultivation of certain life habits is of permanent and universal advantage.

BREATHING. Oxygen is as essential to life as is food. It purifies the blood. Light, shallow breathing means imperfect filling of the air cells and incomplete aeration of the blood. The legitimate result of such disuse is degeneration of lung tissue and ultimate disease.

Respiration should be deep and full. Breathe through the nose. Mouth breathing is allowable only under stress of heavy exercise. Practice breathing exercises in connection with your walking, running and other athletics and gymnastics. Take long, deep breaths whenever you go out of doors. Take special breathing exercises for from five to ten minutes out of doors or before an open window upon rising in the morning and before retiring. You will find it a good tonic. Lay the emphasis upon abdominal breathing. Breathing exercise may at first produce dizziness. This is due to over-stimulus of unused lungs. Lighten the amount of breathing exercise and continue them daily.

Ventilate your room day and night. Cover well and sleep with windows open even in winter.

Breathing exercises improve the carriage, increase the strength of the lung tissue, the size of the lungs and the size of the exterior chest, and give flexibility to the chest walls. Fullness of life and a plenteous supply of oxygen are inseparably associated. There is no "Air Trust." Air is free. Use it.

CIRCULATION A well-balanced circulation is a desideratum not to be despised. Local congestions give rise to many difficulties. The causes of these congestions are many and the points of interruption of the circulation various. e. g. Congestion of blood in the head may result in insomnia, headache, etc., from oversupply of blood in that part of the body, and in digestive troubles, cold feet, etc., from undersupply in another part.

One point of view must obtain for the application of all kinds of remedies, the equalization of the circulation. For example

note the general character of the remedies suggested below for insomnia: "A warm bath," "general massage," "breathing exercises," "a short run or a long walk followed by a light hand bath and a rub down." The effect of each one of these remedies is to remove the congestion of blood from the head and to equalize the circulation.

The best remedy for almost every disturbance of circulation in a person of average strength is light general exercise of some kind, long continued. Even a weak, irregular heart often yields to this kind of treatment. When vigorous exercise is taken, finish with lighter exercise to equalize the circulation before the bath.

BATHING The *skin* is important as an organ of *excretion*, but its greatest function is the regulation of the *body temperature*. Hence the great necessity for keeping it clean and active. The best bath for general cleanliness is a warm tub bath with the free use of soap lasting from ten to twenty minutes. This should be taken once a week unless the sponge, shower, spray or plunge bath occurs daily.

The sponge, shower or spray bath should be *graded*, beginning with tepid or warm and cooling slowly until there is an agreeable shock. It should last not over two minutes. A vigorous rub down with a rough towel which follows for about five minutes should induce a pleasant reaction and a feeling of exhilaration. If then no such feeling of exhilaration follows, the bath was improperly given or was not adapted to your condition.

For the healthy and vigorous, the graded bath is best closed with the plunge. This should last not longer than from five to fifteen minutes. The duration is altogether dependent upon the individual. The sponge, shower, spray or plunge are stimulating as well as cleansing.

Avoid hot baths, cold plunges, (especially before breakfast), the Russian, Turkish, or any other radical therapeutic use of water without the advise of the physical director or your physician. There is nothing better, however, for the regulation of temperature and the equalization of circulation than the rational use of water under proper direction. Baths are classified as *cold* under 65° F.; as *cool* from 65° to 80° F.; as *tepid* from 80° to 92°; as *warm* (neutral 92° to 95°) from 92° to 98°; and as *hot* above 98°. The benefit of a bath depends upon temperature of the room as well as upon temperature of the water. See that the room is from 70° to 78° F.

The best time to bathe is immediately after exercising. Do not cool off before bathing. A light cool hand or sponge bath with a vigorous rub down upon rising or retiring is a good tonic for many. If healthy and vigorous, try it--if you do not secure a good reaction,

discard it as not adapted to you. Never take a cold bath when exhausted, out of breath, within two hours after a full meal or just before such a meal. In cold weather wait about ten minutes after a bath before going out of doors. The more frequent the bath, the shorter it should be. Rub vigorously after a cool bath, secure a fine glow, become thoroughly alive.

CLOTHING Clothing properly adapted to season, climate and occupation is *intended as an aid in the regulation of body temperature*. Improperly used it gives rise to all forms of local congestion, prominent among which are colds in nose, throat and lungs and all forms of chronic catarrh.

To avoid troubles arising from exposure to sudden changes of temperature it is best to *wear light woolen or silk underclothing summer and winter*. This weight and quality of fabric is best adapted to meet bodily changes in body temperature due to amount of activity. Meet the changes in season and climate by the addition of outside clothing. In the winter the majority of men spend the greater part of the time indoors. Heavy underclothing is apt to induce undue perspiration and to render one liable to catch cold when exposed to a sudden draft or to the raw air outside.

For *Gymnasium Clothing* use a light to medium weight of woolen goods, white or fast colored. It absorbs the perspiration better than cotton, protects better from sudden changes of temperature. The best general combination is a shirt with long or quarter sleeves, "Turner" trousers, and low canvas shoes with rubber soles or with soft leather shoes without heels. Shoes should be easy. Keep the feet dry and warm. Do not wear a tight belt or tight clothing, especially during exercise. It restricts circulation.

For *athletic contests* when track pants or tights and trunks are used, still keep a light woolen shirt over the chest, and while standing around during a contest wear a woolen sweater to avoid catching cold.

EYESIGHT Preserve your *eyesight*. Read only by a good light and let it fall over your left shoulder. Bathe the eyes frequently with clean cool water. If they trouble you consult an expert oculist immediately and save pain and permanent damage.

REST *Rest is as essential as food.* The "wear and tear" of city life could be neutralized by proper adjustment of rest periods. Instead we *rob rest and murder sleep*. After meals there should be from fifteen to thirty minutes of rest, and there should be no close mental application for the same length of time before retiring.

Sleep from six to nine hours owing to age and the requirements of the individual organism. Men under twenty usually require

eight or nine hours. Very nervous or anæmic persons or those subjected to great mental strain from worry or intellectual effort require more than those doing heavy muscular work. They usually take much less. This is radically wrong, for the sleep period is peculiarly the time for neural relaxation and renewal of energy.

Sleep with windows open winter and summer. Comparatively more oxygen must be taken in and stored during the sleeping than during the waking period.

Sleep on the right side for the most part, as this secures the best position of the thoracic and abdominal viscera. Train yourself if possible to breathe through the nose, and prevent diseases of the nose and throat. A hair or felt mattress with small to medium-sized pillows and platform spring makes the best bed.

"A tired feeling upon waking is an indication of too little sleep, of disease or of laziness." Get up immediately upon waking. You will sleep more soundly for it the following night, and learn as well to employ fewer hours in sleep and employ them better.

To induce sleep when nervously tired, use one or more of the following simple remedies: Take a warm bath just before retiring; take breathing exercises for five to ten minutes; exercise lightly the muscles of the whole body with open windows; take a short run or long walk, followed by a light hand bath, or rub down with a coarse towel, or take a good massage.

DRINK *Drink freely of pure water* between meals. Take a glass or more of cool water upon rising and retiring. Copious water drinking acts as an internal bath and solvent. Do not drink more than one or two glasses at a meal. It is better to drink a glass before the meal and the rest after it. Washing down the food by constant sipping of water is harmful. Do not drink freely of water just before exercise. During athletic and gymnastic contests rinse out the mouth frequently with cool water. It is no harm to take a swallow or two, especially of oatmeal water or acid lemonade. Do not drink ice-cold water at any time.

Milk is an all-round food as well as drink. Buttermilk and kumyss are most easily digested and are very wholesome summer drinks. The taste for them can often be acquired if they are not at first found palatable.

Coffee and tea are stimulants. They should be discarded. When used in excess they are as harmful as alcoholic and malt liquors. "The place of cocoa in the diet is really not very different from that of tea and coffee."—(Hutchinson). The action of cocoa on the nervous system is less—as it contains less alkaloids. It has some slight nutritive value owing to the presence of the cocoa fat, but is a source

of irritation and sour stomach to many, owing to the difficulty in the digestion of this fat.

FOOD Nutrition lies at the very basis of existence. It determines largely not only the strength of muscular effort, but the character of our thinking. Too much attention therefore can not be given to the proper selection and preparation of food. It is important not only to determine what to eat and how it should be prepared, its nutritive value and digestibility, but also to regulate the quantity, manner of eating and adaptation to the taste of the individual. The former can readily be determined from dietaries; the latter requires much care and personal attention.

Some of the commonest faults are insufficient mastication, over-eating, eating highly seasoned rich mixtures, foods lacking in nutritive value and those which persistently disagree with the stomach. Less common are eating too little, and eating of unpalatable stuff "for conscience' sake" and in obedience to some false scheme of dieting.

Let simplicity, digestibility and palatability determine your diet. Eat regularly, slowly of plain foods, using plenty of grain and fruits. Use variety in different meals; avoid unwholesome mixtures at the same meal. Stimulants are unnatural and unnecessary. Never force yourself to eat. Eat very little when excited or very tired. No dietary will fit all cases; food must be adapted to the normal appetite of the individual. Care for the teeth regularly and escape many diseases.

If *under training* avoid the more fibrous woody vegetables such as cabbage, turnips, etc.; fat meats in general, especially pork because of the difficulty in digestion and the excessive heat production; pies, cakes, rich puddings, and confections because of the danger of undue fermentation from these rich mixtures; a few fruits difficult of digestion; and in general all rich foods, pancakes and other fried foods for the same reasons you avoid fat meat and pastry; avoid also pickles, sauces and condiments, tea, coffee and cocoa, alcoholic and malt liquors. At best they are all dead beats in the digestive economy and do not pay their way, but the stimulants are absolutely pernicious. A true athlete requires no stimulus but the euphoria which springs from reserve force.

From the great variety of wholesome foods remaining select that which pleases the palate. Use plenty of fruit, grain, toast (zweiback) and lean meat. Vegetables, grains and all other starchy foods should be most thoroughly cooked. Lean meat and eggs should be eaten rare.

The most wholesome drinks are water, kumyss, buttermilk, oatmeal water and lemonade. The professed object of dieting for training is to render the alimentary track clean, sweet, free from the slightest local irritation and heat. You want all your strength and a clear head for the athletic event before you. Study adaptation.

D I E T T A B L E*

(The foods in this diet table marked (1) are fattening; those marked (L) laxative; and those marked (G) are to be avoided in cases of rheumatic diathesis.)

E A S Y T O D I G E S T

G 1	Beef, roasted fat	1 Milk
G 1	Beef, roasted lean	G L 1 Mutton, fat
G 1	Beef, broiled fat	G L Mutton, lean
G	Beef, broiled lean	G L 1 Mutton broth
	Beef tea	1 Marmalade
L	Baked Apple	1 Macaroni
1	Bread, wheat	1 Oysters, raw
1	Bread, rye	Oysters, roasted
L 1	Bread, graham	Pigeon
1	Bread, barley	Partridge
L 1	Bread, whole wheat	Pheasant
L 1	Buttermilk	L 1 Pears
	Chicken	Peas
1	Cheese, Neuchatel	G 1 Rabbit
L 1	Cooked fruits [sugar	1 Rice
L	Cooked fruits without	L Spinach
1	Custard	G Sweetbreads
	Eggs, soft-boiled	1 Sago
1	Eggs and milk pudding	Shad
	Flounders	Sole
1	Farinaceous pudding	Smelt
	Grouse	L Tomatoes
	Gelatine	Trout
G 1	Hare	Tripe
1	Haddock, with sauce	Turbot
	Haddock, without sauce	1 Tapioca
1	Kumyss	Toast
G 1	Lamb, fat	1 Vermicelli
G	Lamb, lean	L 1 Whey

*Taken from manual of the physical department, Boston Y. M. C. A.

MODERATELY DIGESTIBLE

	Asparagus	Herring
L 1	Apples	G Hashes
G L 1	Bacon	G Liver
	Beets	Lobster
L 1	Barley, boiled	Mussels
	Clams, roasted	G L 1 Oatmeal
	Cauliflower	1 Oyster stew
	Crabs	Oysters, broiled
	Cod, fresh	1 Oyster plant
1	Cocoa	1 Onions
L 1	Cherries	L Oranges
1	Cream	L 1 Peaches
1	Carrots	L 1 Prunes
	Duck	1 Parsnips
	Eggs, hard-boiled	1 Potatoes, white
L	Grapes	1 Potatoes, sweet
	Halibut	L 1 Raspberries
L	Strawberries	Turkey
	Shrimps	Turtle
	Snipe	Turnip
1	Soups, cream	L 1 Wheat, cracked
	Soups, plain	Wild water fowl
1	Squash	Woodcock
	Tea	G L Veal

HARD TO DIGEST

1	Bread, fresh	Mushrooms
1	Buckwheat cakes	Nuts
1	Butter	1 Oil
G 1	Baked Beans	1 Oysters, fried
	Cabbage	G 1 Pork
1	Cakes, hot	1 Pastry
	Cheese	L Plums
L 1	Currants	L Pineapple
1	Chocolate	Pickle
L 1	Corn, green	1 Pudding, hot batter
L 1	Dates	L Rhubarb
L 1	Dandelion	G Salmon
L 1	Figs	Salt meat
1	Goose	Sausage
	Lobster, fried	Salt fish
	Mackerel	1 Stewed meats
1	Muffins, hot	

EXERCISE

The human body is what we make it—muscle and nerve cells reflect the whole previous hygienic history of the man. Nutrition, strength of tissue and organic function are the joint product of diet, exercise and other personal habits of life. Modern conditions of living and of labor are responsible for a deplorable lack of organic vigor, especially among the people of our cities. This tendency to physical degeneration is due principally to the lack of muscular exercise involved in sedentary employments. The man who works at a bench or sits in an office must pay the price with his life sooner or later by the abridgment of its power day by day, by being cut off before his time or in the degree of health and longevity of his children unless some means is found to counteract the physical deterioration which logically results from his occupation.

The commonest results of lack of muscular exercise are stooping posture, flat chest, protruding abdomen, weak, flabby muscles, "inefficient heart action indicated by shortness of breath and lack of endurance, perhaps indigestion and constipation, headaches, lassitude and disinclination to exertion,—in short, a general lack of organic vigor."

The best remedy for these conditions is to revert to man's normal mode of living out of doors. Since out-door occupations are few and this manner of life is impracticable for most men, exercises in the gymnasium have been devised to meet as far as is possible the need. Regular systematic physical training will do much to counteract the evils which spring from the intense mental application and the close confinement involved in the civilization of today.

Do not think the results of a half hour or an hour of physical exercise are of indifferent value. It is not true. A vigorous man may climb the Washington Monument (500 feet) in from five to eight minutes. According to Franklands' table he has done one-twentieth of a full day's physical labor. The doing of one-tenth of a day's work will keep one in good physical condition. Fifteen minutes daily of very vigorous work will often suffice if breathing exercises and running (a half-mile or a mile) are included.

Do not think that after a hard day's mental work you are too tired to do physical work. Change of occupation is in itself a rest, but when the change is in the nature of a recreation you will find yourself surprisingly rested and reinvigorated through and through. Emphasize games and all out-of-door life. If necessary be a crank about some game or games which are approved as good for you by the physical director.

The following anthropometric table is one of the means by which exercise is to be adapted to your physical condition.

EXPLANATION OF ANTHROPOMETRIC TABLE

See next page

1 The table on the other side of this sheet shows how you compare with others of the *same age*.

2 There are five different sections to this table for five different typical ages. Your measurements are plotted in the section which corresponds to your age reckoned to the nearest birthday.

3 If you are of medium height and well developed in every particular the line across the table, which joins the dots showing development of individual qualities, will follow closely the black figures of the 50% column. The better your measurements are, the more nearly straight will be this line which represents them. If tall or short this table shows how you compare in each quality with the type for your age.

4 In each section the line of figures opposite 75 represents the 75% line, opposite M represents the mean or normal, and opposite 25 represents the 25% line. Should the line representing your measurements vary above the 75% line or below the 25% line of figures for any measurement, your development in this particular is abnormal. When it is below the 25% line it may be necessary for you to take special corrective exercises. The physical director will point out any special lack under "Defects," and tell you how to correct it under "Prescription of Exercise".

5 If your Vitality Coefficient (V.C.) is very low, you require plenty of out of door exercise. Take only such corrective gymnastics and games as the physical director or your family physician may encourage.

HOW TO EXERCISE

Exercise regularly, vigorously, with enthusiasm. Have a definite time for it. Give it all your energy. Enjoy it to the full.

Work out of doors as much as possible. Get a good healthy tan. Sunshine is a great tonic. It gives life to people as well as plants.

The best time to exercise is from 4 to 6 in the afternoon; 10 to 12 in the morning and 8 to 9 in the evening are also good. It is better not to exercise too vigorously before breakfast nor within a half-hour of bedtime. Sleep is better when the circulation is normal.

The *minimum of exercise* per week which will keep an average man in good health is from two to four hours. Double the amount of time will secure better health and stronger development. It is better to divide the time between at least three days.

Take all-round exercise. There is no one exercise which alone will insure health. Too much specialization upon one group of

ANTHROPOME

for Boys Twelve to Sixteen

PHYSICAL TYPE FOR EACH AGE AND VITALITY COEFFICIENTS

To transpose centimetres to inches,

The figures in *Italics* represent INCHES and POUNDS.All measurements are given in both the Common and Metric Systems.
multiply by .3870; kilograms to pounds multiply by 2.2; inches to cubic inches, multiply by 61.

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AGE PER CENTS	TWELVE [12] YEARS						THIRTEEN [13] YEARS						FOURTEEN [14] YEARS	
	$\pm D^*$	190..... Mo.Da.Hr.	25	M 50	75	190..... Mo.Da.Hr.	$\pm D^*$	190..... Mo.Da.Hr.	25	M 50	75	190..... Mo.Da.Hr.	$\pm D^*$	19 Mo.
VITAL														
Weight	2.8 6.2	80.1 60.3	32.9	35.7		3.4 7.6	82.1 70.7	35.5 38.9	38.9 38.9				4.7 10.4	
Height	4.8 1.9	125.4 53.3	140.2 55.2	145.0 57.1		4.8 1.9	140.2 55.2	145.0 59.0	149.8 149.8				5.6 2.2	
Trunk Length (Episternal)	1.5 6	49.8 19.4	50.8 20.0	52.8 20.6		1.8 7	50.0 19.7	51.8 20.4	53.6 57.1				2.5 1.0	
+Height Sitting	2.3 9	71.1 28.0	73.4 28.0	75.7 28.8		-2.3 9	72.9 28.7	75.2 29.6	77.5 30.5				2.8 1.1	
Breadth of Chest Expanded	1.0 4	22.6 8.9	23.6 9.3	24.6 9.7		1.0 4	23.6 9.3	24.6 9.7	25.6 10.1				1.8 5	
Expansion in Bd. of Chest	7 3	2.6 1.0	3.8 1.3	4.0 1.6		7 3	2.6 1.0	2.8 1.3	3.0 1.6				1.0 4	
Breadth of Waist	1.0 4	18.6 7.3	19.6 7.7	20.6 8.1		1.0 4	19.1 7.5	20.1 7.9	21.1 8.3				1.5 6	
Depth of Chest Expanded	1.0 4	10.8 6.4	17.8 6.8	18.3 7.2		1.0 4	16.8 6.6	17.8 7.0	18.6 7.4				1.0 4	
Expansion in Depth of Chest	5 2	1.5 0.8	2.0 1.0	2.5 1.0		5 2	1.8 0.7	2.8 1.1	2.8 1.1				8 3	
Depth of Abdomen	1.8 5	18.2 5.2	14.5 5.7	15.8 6.2		1.8 5	18.2 5.2	14.5 5.7	15.8 6.2				1.5 6	
Girth of Neck	1.0 4	25.2 10.3	27.2 10.7	28.2 11.1		1.8 5	26.9 10.6	28.2 11.1	29.5 11.6				1.5 6	
Girth of Chest, 9th.Rib Exp.	3.8 1.3	62.2 24.5	65.6 25.3	68.8 27.1		3.8 1.5	64.8 25.3	68.1 26.8	71.9 28.3				4.0 1.6	
Expans. in Girth of Ch. 9th Rib	1.0 4	5.1 2.0	6.1 2.4	7.1 2.8		1.0 4	5.6 2.2	6.6 2.6	7.6 3.0				1.8 5	
Girth of Waist	2.8 9	86.6 22.3	88.9 23.2	91.2 24.1		2.8 1.5	57.2 22.5	61.0 24.0	64.8 25.5				8.0 1.2	
STRENGTHS														
Lung Capacity	17 10.40	1.81 110.40	1.98 120.80	2.15 137.20		25 15.40	1.95 118.80	2.20 126.20	2.45 139.60				33 20.20	
Shoulder Retractors	3.2 7.3	18.2 26.9	15.5 34.2	18.8 41.5		4.0 8.8	16.0 33.1	19.0 44.0	20.0 30.7				4.5 9.9	
Forearm, Right	2.8 6.1	16.6 30.7	19.4 42.8	22.2 45.0		4.1 9.0	18.6 47.0	22.7 30.0	26.8 39.0				4.2 9.2	
Forearm, Left	3.2 7.0	15.1 33.4	18.8 42.4	21.5 47.4		3.1 6.9	18.7 47.1	21.8 47.0	24.9 53.0				3.8 8.4	
SPECIAL														
Length of Head	5 2	18.0 7.1	18.5 7.3	19.0 7.5		5 2	18.3 7.2	18.8 7.4	19.8 7.6				5 2	
Breadth of Head	3 1	14.4 5.7	14.7 5.8	15.0 5.9		3 1	14.4 5.7	14.7 5.8	15.0 5.9				5 2	
Breadth of Shoulders	1.0 4	32.5 12.8	38.5 13.2	34.5 13.6		1.0 4	33.5 13.2	34.5 13.6	35.5 14.0				1.5 0	
Breadth of Hips	7 3	25.9 10.2	26.6 10.5	27.8 10.8		1.0 4	27.0 10.6	28.0 11.0	29.0 11.4				1.3 5	
Girth of Chest Expanded	8.0 2.2	66.9 27.1	71.9 28.3	74.9 29.5		8.6 1.4	69.0 27.2	72.6 28.6	76.2 30.0				4.0 1.6	
Expansion in Girth of Chest	1.0 4	6.1 2.4	7.1 2.8	8.1 3.2		1.8 5	6.8 2.5	7.6 3.0	8.9 3.5				1.3 5	
Girth of Right Forearm	1.0 4	18.3 7.2	19.3 7.0	20.3 8.0		1.0 4	18.8 7.4	19.8 7.8	20.8 8.2				1.3 5	
Girth of Left Forearm	1.0 4	18.8 7.2	19.8 7.6	20.8 8.0		1.0 4	18.6 7.3	19.6 7.7	20.6 8.1				1.3 5	
Girth of Right Arm, Contr'd	1.8 7	19.3 7.6	21.1 8.3	22.9 9.0		1.3 5	20.3 8.0	21.6 8.5	22.9 9.0				1.8 7	
Girth of Left Arm, Contr'd	1.5 6	19.1 7.5	20.6 8.1	22.1 8.7		1.8 5	19.8 7.8	21.1 8.3	22.4 8.8				1.8 7	
Girth of Right Thigh	1.8 7	36.3 14.3	38.1 15.0	39.9 15.7		3.0 1.2	38.7 15.2	41.7 17.6	44.7 17.6				2.0 1.1	
Girth of Left Thigh	2.0 8	85.9 14.1	87.9 14.0	89.9 15.7		2.0 8	89.4 15.3	91.4 17.1	94.4 17.1				2.8 1.1	
Girth of Right Calf	1.3 5	25.9 10.2	27.2 10.7	28.5 11.2		1.3 5	26.9 10.6	28.2 11.1	29.5 11.6				2.0 8	
Girth of Left Calf	1.5 6	25.4 10.0	26.9 10.6	28.4 11.2		1.8 5	26.7 10.5	28.0 11.0	29.8 11.5				2.0 8	
Strength of Back	18.6 30.0	43.1 95.0	56.7 125.0	70.8 135.0		18.1 40.0	52.2 115.0	70.8 135.0	88.4 105.0				20.4 45.0	
Strength of Legs	18.6 30.0	56.7 125.0	70.8 135.0	88.9 105.0		25.0 55.0	58.9 120.0	83.9 135.0	100.9 120.0				28.6 62.1	
COEFFICIENTS														
R. H. C.	0.08	0.08	105			R. H. C.	0.78	100	124				R. H. C.	
O. S. H. C.	104.55	115.92	127.97			O. S. H. C.	107.41	118.76	132.75				O. S. H. C.	
O. S. H. C.	150.70	167.50	185.92			O. S. H. C.	156.61	173.87	191.00				O. S. H. C.	
V. C.	7.18	9.99	13.47			V. C.	8.36	11.90	16.50				V. C.	
tV. C.	10.28	14.43	19.50			tV. C.	12.20	17.41	23.86				tV. C.	
V. W. C.	237	304	377			V. W. C.	261	388	424				V. W. C.	
tV. W. C.	342	430	546			tV. W. C.	380	490	613				tV. W. C.	

NOTES. [*] In the columns headed $\pm D^*$ are indicated the probable errors.

[†] O. S. H. C., V. C., and V. W. C., are Coefficients calculated by adapted for use where clothing is not removed.

ERIC TABLE

[2-16] Years of Age

BASED ON THE MEASUREMENTS OF THREE THOUSAND BOYS

EN [14] YEARS				FIFTEEN [15] YEARS				SIXTEEN [16] YEARS				
25	50	75	190 Mo.Da.Hr	25	50	75	190 Mo.Da.Hr	25	50	75	190 Mo.Da.Hr	
95 0	89 7	44 4		7 1	39 7	46 8	53 9	5 3	47 5	55 8	58 1	
77 1	87 5	07 0		15 0	87 5	103 1	118 7	17 6	104 8	116 4	126 0	
145 5	151 1	156 7		6 6	151 6	158 2	164 8	5 8	158 2	165 5	168 8	
37 3	59 5	61 7		2 6	59 7	62 3	69 9	2 1	62 3	64 6	66 5	
51 1	58 6	66 1		3 0	62 9	59 8	58 9	3 0	56 1	59 1	62 1	
20 1	21 1	22 1		1 2	20 8	22 0	23 2	1 2	22 1	23 3	24 5	
75 2	78 0	80 8		4 0	77 5	81 5	85 5	3 8	81 8	85 1	88 4	
29 6	30 7	31 8		1 6	30 5	32 1	33 7	1 3	32 2	33 5	34 8	
24 1	25 4	26 7		1 3	24 6	25 9	27 2	1 8	25 9	27 2	28 5	
9 5	10 0	10 5		5	9 7	10 2	10 7	5	10 2	10 7	11 2	
2 6	3 6	4 6		1 0	2 6	3 6	4 6	1 0	2 6	3 6	4 6	
1 0	1 4	1 8		4	1 0	1 4	1 8	4	1 0	1 4	1 8	
19 6	21 1	22 6		1 8	29 8	22 1	23 4	1 5	21 6	23 1	24 6	
7 7	8 3	8 9		5	8 2	8 7	9 2	0	8 5	9 1	9 7	
17 3	18 8	19 3		1 8	17 7	19 0	20 8	1 0	18 8	19 8	20 8	
5 8	7 2	7 6		5	7 0	7 5	8 0	4	7 4	7 8	8 2	
1 8	2 6	3 4		3	1 8	2 6	3 4	3	2 0	2 8	3 6	
7 1	1 0	1 3		3	7	1 0	1 3	3	8	1 1	1 4	
13 7	15 2	16 7		1 8	14 5	16 3	18 1	1 8	15 2	17 0	18 8	
5 4	6 0	6 6		7	5 7	6 4	7 1	7	6 0	6 7	7 4	
28 2	29 7	31 2		1 5	29 5	31 0	32 5	1 3	31 2	32 5	33 8	
1 1	1 7	12 3		6	11 6	12 2	12 8	5	12 3	12 8	13 3	
65 3	69 3	73 8		8 8	69 1	72 0	76 7	3 8	72 4	76 2	80 0	
25 7	27 3	28 9		1 5	27 2	28 7	29 2	1 5	28 5	30 0	31 5	
5 6	6 9	8 2		1 3	5 6	6 9	8 2	1 3	5 8	7 1	8 4	
2 2	2 7	3 2		5	2 2	2 7	3 2	5	2 3	2 8	3 3	
60 8	63 8	66 8		8 0	63 8	66 8	69 8	2 5	66 1	68 6	71 1	
23 9	25 1	26 3		1 2	25 1	26 3	27 5	1 0	26 0	27 0	28 0	
2 10	9 43	9 76			42	9 40	9 89	9 94	43	9 88	9 91	9 94
129 10	168 70	168 50		25 70	160 40	172 10	197 80	26 20	175 80	202 00	228 20	
17 5	22 0	26 5		5 0	23 2	28 2	33 2	5 8	25 0	30 3	35 6	
38 6	48 5	53 4		11 0	31 2	62 2	73 2	11 7	35 1	66 8	78 5	
22 2	26 4	30 6		6 5	24 9	31 4	37 9	7 2	28 9	36 1	43 3	
68 9	58 1	67 3		14 3	35 0	69 3	75 6	15 9	63 6	79 5	95 4	
20 2	24 0	27 8		5 9	21 3	22 2	33 1	6 8	26 3	31 1	39 9	
44 6	53 0	67 4		17 0	47 0	60	73 0	15 0	58 0	77 0	89 0	
18 3	18 8	19 3		5	18 5	19 0	19 5	5	18 8	19 3	19 8	
7 2	7 4	7 6		2	7 3	7 5	7 7	2	7 4	7 6	7 8	
14 2	14 7	15 2		5	14 5	15 0	15 5	5	14 5	15 0	15 5	
5 6	5 8	6 0		2	5 7	5 9	6 1	2	5 7	5 9	6 1	
34 3	35 8	37 3		1 8	35 5	37 3	39 1	2 0	36 9	39 9	40 9	
13 5	14 1	14 7		7	14 0	14 7	15 4	8	14 5	15 3	16 5	
27 4	28 7	30 0		1 5	28 0	29 5	31 0	1 5	29 0	30 5	32 0	
70 8	71 3	71 8		6	11 0	11 6	12 2	6	11 4	12 0	12 6	
73 0	77 0	81 0		8 3	78 0	81 3	84 6	8 8	80 8	84 6	88 4	
28 7	30 3	37 9		1 3	30 7	32 0	33 3	1 5	31 7	33 3	34 8	
6 8	8 1	9 4		1 3	6 8	8 1	9 4	1 5	6 8	8 3	9 8	
2 7	3 2	3 7		5	2 7	3 2	3 7	6	2 7	3 2	3 9	
19 3	20 6	21 9		1 5	22 1	23 6	25 1	1 3	22 6	23 9	25 2	
7 6	8 1	8 6		6	8 7	9 3	9 9	5	8 9	9 4	9 9	
16 8	20 1	21 4		1 8	20 6	22 4	24 2	1 5	21 6	23 1	24 6	
7 4	7 9	8 4		7	19 1	19 8	20 5	6	18 5	19 1	20 7	
21 6	23 4	25 2		1 8	22 9	24 6	26 4	1 8	24 6	26 4	28 2	
8 5	9 2	9 9		7	9 0	9 7	10 4	7	9 7	10 4	11 1	
21 1	22 9	24 7		1 8	22 3	24 1	25 9	1 5	22 4	25 7	27 2	
8 3	9 0	9 7		7	8 8	9 5	10 2	6	9 5	10 1	10 7	
42 5	44 5	46 5		2 5	44 0	46 5	49 0	2 3	46 2	48 5	50 8	
16 7	17 5	18 3		1 0	17 3	18 3	19 3	9	18 2	19 1	20 0	
40 9	43 7	46 5		2 5	44 0	46 5	49 0	2 5	45 8	48 3	50 8	
16 1	17 2	18 3		1 0	17 3	18 3	19 3	1 0	18 0	19 0	20 0	
28 0	30 0	32 0		1 8	29 4	31 2	33 0	1 8	31 2	33 0	34 8	
11 0	11 8	12 6		7	11 6	12 3	13 0	7	12 3	13 0	13 7	
28 0	30 0	32 0		1 8	29 7	31 5	33 8	1 8	31 2	33 0	34 8	
11 0	11 8	12 6		7	11 7	12 4	13 1	7	12 3	13 0	13 7	
61 2	81 6	102 0		22 7	74 8	97 5	120 2	25 0	92 9	117 9	142 9	
35 0	160 0	225 0		50 0	105 0	215 0	205 0	55 0	205 0	200 0	215 0	
80 3	108 9	137 5		30 8	109 8	140 6	171 4	34 4	124 4	158 8	192 2	
77 0	240 0	307 1		67 9	242 1	270 0	277 9	75 8	274 3	270 0	287 7	
5 081	111	144			R. H. C.	089	123	161	R. H. C.	106	144	188
112 05	127 65	144 29			O. S. H. C.	120 41	138 76	158 38	O. S. H. C.	135 16	155 15	176 61
104 90	165 75	207 87			O. S. H. C.	176 41	202 31	229 91	O. S. H. C.	197 08	223 41	250 87
9 06	14 16	20 84			V. C.	10 68	17 07	25 53	V. C.	14 27	23 90	32 87
13 33	20 67	30 10			V. C. a	15 65	24 89	37 66	V. C. a	20 87	32 11	40 70
259	357	460			V. W. C.	269	365	474	V. W. C.	300	422	566

DIRECTIONS for PLOTTING. 1.—Plot a given individual in the age-section indicated by his nearest birth-year. 2.—The right-hand line of the two enclosing the 75 per cent. column may be regarded as the 90 per cent. lines. 4.—The right-hand line of the two enclosing the 75 per cent. column may be regarded as the 90 per cent. line. 5.—In the column headed $\frac{1}{2}D$ are indicated the *probable deviations* for each age, for each of the 75 per cent. lines from the mean. 6.—Should a measurement differ from the 75 per cent. line above or below it, it should be placed just outside the lines enclosing 75 per cent. and 25 per cent. grades to indicate extreme abnormality.

day. 2—Place dots to left of figures. 3—Regard middle of spaces as 25, 50 and 75 per cent. line; the left hand line of the two enclosing the 25 per cent. column may be measurement. The *probable deviation* in this table is the deviation of the 25 per cent. line below to the amount of the *probable deviation*, the point should

solutions for each measurement.

why the use of Sitting Height, instead of Trunk Length. These Coefficients are especially

FORM 3B

Physical Director.

muscles often develops abnormality. It is rarely conducive to health. *Variety* adds to one's interest. Class work will provide this variety and all-round character. Do not practice exclusively one type of physical training, but use educational, corrective and recreative work in the proportions advised by the physical director.

Exercise must be adapted to the individual. For those deficient in development or in incorrect posture, special corrective work, hygienic gymnastics and lighter games; for the healthy and vigorous, the more vigorous gymnastics, games and athletics; for the average person light exercise, corrective hygienic and recreative.

If it is found upon examination that you require any special prescription outside of the regular class work, you will note it under "*Prescription.*" Few men require special work. If any is assigned, practice it carefully.

The *character* of the exercise selected depends upon your purpose. Exercise for health. Strength will follow, and a measure of ease of movement. Use light weights and quick movements chiefly. They make active, elastic muscles. Heavy work gives strength but slower coördination. Strength, endurance and skill are best attained by the mingling of a small amount of vigorous effort with a large amount of light work, by preserving the right proportions between corrective, educational and recreative forms of exercise.

Avoid working for mere size of muscles. You will be disappointed. There is often a rapid increase in size for a few weeks. Later development in size is slower, but the more important work of increase in muscular function, neural control and organic vigor is still going on. Measure your improvement by what you can do, not by size.

Avoid making work out of your play. Don't worry. Relax and have a good time. Avoid exercise forbidden by the director or your physician. Avoid exhausting feats of strength. Take no vigorous exercise within two hours after a full meal. Never exercise until exhausted. As long as you are able to be about, you will profit by exercise. You require it as much as food. Adapt it to your need as you do the food.

Begin lightly, warm up to vigorous exercise and finish quietly. Practice corrective exercises first before becoming tired from other work. When practicing alone spend the first part of your time in following out your special prescription of exercise. The following order taken from the Gymnasium Manual of Columbia University gives a fair idea of suitable gymnastic progression:

ORDER OF EXERCISE

Following this order of exercise and working continuously and vigorously will give the best results for the time expended.

1 A General Exercise, not too violent, to set the blood moving more rapidly, such as passing the medicine balls, a jog around the track, or free-hand movements.

2 Arm Movements, either without apparatus or with quarter circle, or overhead pulleys, accompanied by slow, deep breathing.

3 Hanging Exercises—Fixing the chest wall and raising the body. Examples: Horizontal ladders, high bars, horizontal bars, rings, climbing rope, climbing ladder and stall bars.

4 Balance Movements—Any exercise where the base is reduced. Examples: Standing on one foot, rising on toes or heels, hopping with right or left leg, or walking on one bar of the low parallels.

5 Shoulderblade Work—Chest weights and Indian clubs; arm swings and thrusts, with or without dumb bells.

6 Abdominal Exercises—Lying on the back, raise one or both legs. Sitting on benches or floor with feet fixed, bend backward from the hips, keeping back straight and head erect. Hanging position, raise legs, with knees bent or straight, alternately or together. The same when standing, are also good, especially when done in quick rhythm.

7 Lateral Trunk—Any movements including side bendings, side pulley-weight work, and straight leg vaulting to left and right.

8 Slow Leg Exercises—High and low leg pulleys, head and shoulder lift, and knee bending with or without dumb bells in the hands.

9 Jumping, vaulting, tumbling, running, wrestling, boxing, racing, games, etc.

10 A few slow, deep respirations.

11 A bath—a dash of warm water followed by cold.

12 Rub down briskly, and dress slowly.

PREScription

Some difficulties are so common as to make desirable a brief statement of their general line of treatment. Exercise alone will not correct them, but exercise, diet, baths, change of occupation, and rest will meet the majority of them. Work under advice of the physical director. Any complications where the use of drugs appears to be demanded should be referred to a practising physician.

TO INCREASE THE WEIGHT 1 Drink freely of cool water, or hot if troubled with indigestion.

2 *Eat simply* of the most digestible and fattening foods such as milk, eggs, dates and figs. Take the eggs rare, or raw beaten with milk. Use zweiback to encourage good mastication. Use also plenty of moist foods well cooked, including the starchy foods, the breakfast grains, potatoes, green corn, etc. Use plenty of fruit and sugar. Avoid such foods as prove constipating. Avoid rich mixtures liable to induce indigestion. Avoid condiments, relishes, stimulants and an excess of acid. Foods marked No. 1 in the diet table were selected as preferable.

3 Let baths be brief and not too frequent. Use a dry rub occasionally as a substitute.

4 Take an occasional massage if practicable. If the skin has become too dry from excessive bathing or any other cause take a good oil rub with the massage.

5 Relax. Give yourself some leisure for recreation. Don't worry. Be regular in your habits.

6 Be scrupulous about the *rest periods* after each meal. *Sleep* from eight to ten hours.

7 Take plenty of slow, regular light exercise. Practice breathing exercises. Avoid the more exciting strenuous sports. Golf, cricket or light tennis are the type demanded.

In extreme cases of mal-nutrition change to an out-door occupation may be necessary. Heredity sometimes prevents the putting on of very large amount of flesh.

TO REDUCE THE WEIGHT 1 Reduce the water supply to the minimum, necessary for health. Reduce gradually.

2 Reduce the amount of food to the minimum. Avoid fattening foods, including the starches, sugars, and sweet fruits. Use acid fruits and keep the bowels open. Avoid condiments, relishes stimulants, and all rich mixtures. Use dry foods

and masticate well. In extreme cases the diet may need to be made up almost entirely of proteids. Consult the director or your physician.

3 Bathe frequently. Take cold baths after exercise daily. Take a Turkish, electric light or Russian bath once a week, followed by a general massage.

4 Become as active as possible in your general habits of life. Walk each way to business if near enough. Walk two miles or more a day if possible.

5 Take the minimum of sleep which your age and individual needs require. Avoid sluggishness.

6 Begin with light exercise and increase in amount and vigor day by day. The type of exercise required is jog running, a vigorous use of a hygienic drill like Roberts' or McCurdy's dumb-bell drills, bag punching and abdominal work on the mats. Roberts' pulley weight drill is also good. Use heavy weights. Dress warmly in woolen and get up a good sweat. Running, horseback riding, and tennis are good out-of-door exercises.

CONSTIPATION *Drink freely of water. Take a glass or more upon rising in the morning and upon retiring.*

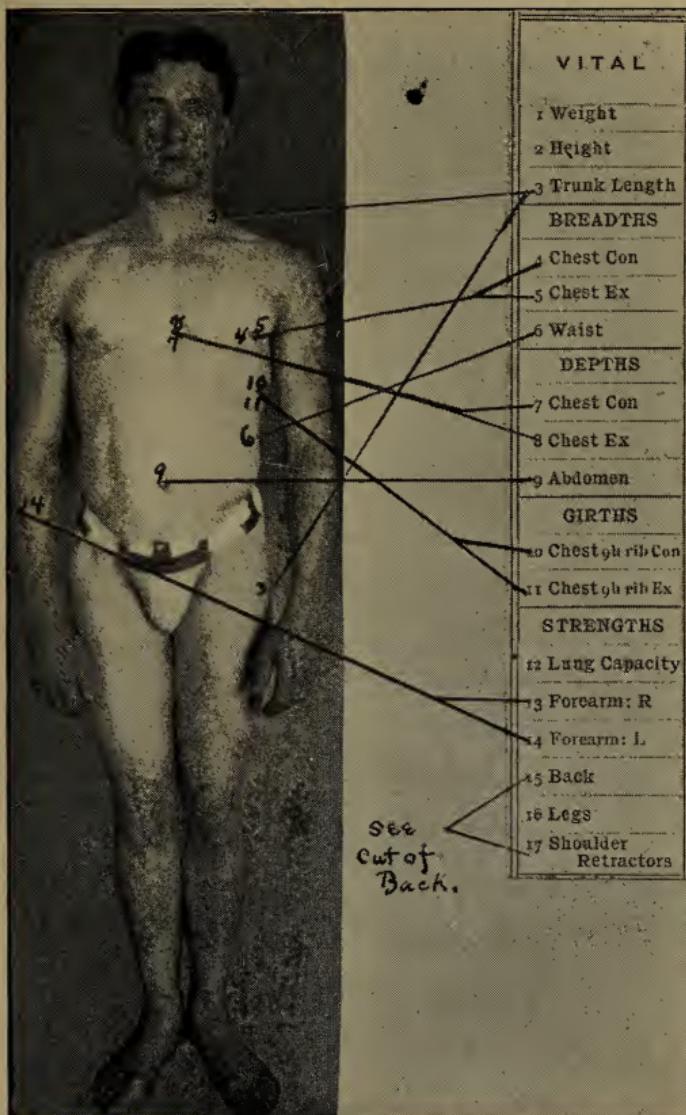
Eat plenty of grains, juicy fruits, figs, prunes, and other laxative foods. Use bulky foods and moist foods. Masticate thoroughly. Avoid fried foods, especially meat and eggs overdone. Avoid pastry and in general the use of much sugar. Foods are marked L in the diet table to indicate their laxative character.

Have a regular hour of *evacuation*.

An occasional *massage of abdomen* is valuable. In extreme cases every day. As soon as possible massage should be dropped. Do not become dependent upon it.

Relax. Recreate. Do not worry. Take plenty of rest.

Exercise regularly. Emphasize abdominal work outlined under abdomen and lower back. In the mat work crowd the knees up into the abdomen. Emphasize breathing exercises, rapid walking, riding horseback, running. In extreme cases it may become necessary to change from a sedentary to an out-of-door active occupation.



PREScription "VITAL"

Emphasize items checked (✓)

ORGANIC VIGOR The vital thing in securing *organic vigor* is nutrition. Poor heredity, occupation and the inroads of disease may render this exceedingly difficult and slow. Employ the general regime indicated under "How to increase weight," but for those who have suffered from nervous prostration or general debility let the exercise be milder and the rest periods longer. Take plenty of both. Lay special stress upon exercises for broadening and deepening the trunk and improving the differential capacity. Develop the respiratory muscles and increase the organic capacity of the trunk. This may be effected by muscular work and by breathing exercises.

TRUNK LENGTH

DEVELOPMENT *Trunk length* is practically a fixed quantity except during the period of growth. Before twenty years it may be modified considerably by the practice of suspended exercises such as climbing ropes, poles, ladders, etc., and by attention to posture.

Length of the chest cavity, however, may be increased considerably by the use of *abdominal breathing*. *Place the hands on the hips and breathe, lowering and raising the diaphragm against pressure from the fingers.*

CHEST BREADTH

Arm raising sideward and upward with dumb bells or overhead pulleys.

Hang and travel with hands wide apart on rings and other overhead apparatus.

Take breathing exercises, distending the lower chest laterally upon inspiration and contracting it on expiration. Half abduction of the arms may be used to vary the exercise, that is the arms may be lifted to side horizontal during the inspiration.

WAIST BREADTH

Standing position, sideward bend and sideward twist.

Balancing exercises.

Flank vault.

Same exercises as for Chest Breadth.

CHEST DEPTH

Arm raising with dumb bells or overhead pulleys front and upward (half flexion and full flexion).

Head press position, chin in, press head upward against hands on three counts.

Voluntary raising the chest without forced breathing. (Sternum expression.)

Backward bending of head, chin in, while taking a full breath.

Raise the chest upward and forward, while taking a full breath, as much as possible.

General exercise—running and climbing.

ABDOMEN

Standing position, bending of trunk forward and backward.

Standing position, thigh flexion with knee bending and leg flinging.

Lying position, thigh flexion with knees bent, and legs straight.

Lying position, rise to sitting position with arms at sides or folded.

Hanging position, knee bending and leg raising.

Abdominal breathing as under "Trunk Length."

Running.

UPPER BACK

Pulley weight work, facing machine.

Pull up to chin in hang with hands wide apart.

Dips on floor, toes touching, body straight.

Prone lying position, raise trunk upward with and without use of hands.

Prone lying position, on a bench, arm movements.

Rowing.

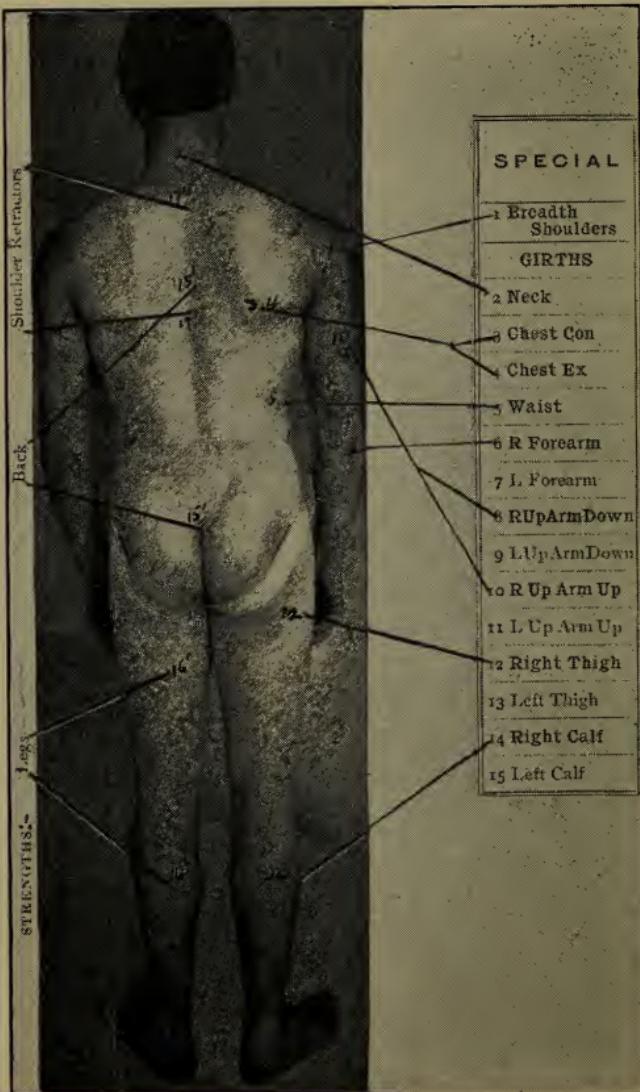
LOWER BACK

Floor pulleys, forward bending and raising of trunk.

Standing position, bending forward and backward.

Lying position, on bench, bending downward.

Rowing.



PRESCRIPTION "Special"

Emphasize work checked (V)

Do not place too much emphasis upon muscular size and symmetry. The numbers correspond as closely as possible to the order of the measurements under "Special" on the anthropometric table. Numbers 3, 4 and 5 of the list are dealt with under "Vital." Some general vigorous exercise is placed last under each number.

1 SHOULDERS

(For low shoulder. Shrug low shoulder with iron dumb bell in the hand. Push up bell from low shoulder, body bent slightly forward.)

Any exercise carrying the arm from the body against resistance.

Arm raising with dumb bells.

Arm raising with chest weights sideward, upward, back and front.

Backward swings with clubs.

Dipping exercises.

Traveling rings.

2 NECK

Any exercise moving the head against resistance.

Head clasp position. Bend head backward, forward and to each side, resisting with the hands.

Turn head left and right alternately.

Head springs, rolls and snaps.

6-7 FOREARM AND WRIST

Any exercise flexing and extending fingers and wrist, or promoting and supinating the forearm against resistance.

Finger flexion and extension.

Wrist flexion and extension.

Wrist twists with dumb bells.

Small circles with clubs.

Rings or high bar.

Horizontal ladder or suspended parallels.

Rope climbing.

8-9 UPPER ARM (back or triceps)

Any exercise strengthening the arm and locking the elbow against resistance.

Downward thrusts with dumb bells.

Arm extension with chest weights.

Push up five-pound bells.

Dips on floor or parallels.

Hand walk on parallels in cross rest position.

APR 8 1905

10-11 UPPER ARM (front or biceps)

Any exercise flexing the forearm upon the arm.

Arm bending resisting with triceps.

Arm bending with dumb bells or chest weights.

Raising chin to bar and other work in the hanging position.

Ladder and rope climbing.

12-13 THIGH

Front. Any exercise flexing the thigh or straightening the leg.

Low knee bending with and without weights.

Running with pronounced thigh flexion.

Jumping.

Hanging position, flex thigh, knees straight.

Back. Any exercise extending the thigh or bending the knee.

Thigh extension, knees straight and toes pointed.

Running with pronounced leg flexion.

Low forward trunk bend touching floor with fingers, knees straight.

Outside. Any exercise spreading the legs on horse buck or parallels, or in free calisthenic work.

Abduct thigh in standing, sitting and hanging position or with leg machine.

Inside. Adduct thigh. Use the same leg-spreading movements as for abduction, with emphasis of the exercise upon the leg closing instead of upon the parting.

Open and close the feet.

General exercise for thigh. Running and hill climbing.

14-15 LEG

Front. Raise toes, keeping trunk and hips well forward, knees straight.

Back. Heel raising. Hop. Springboard jump.

Walking and running on toes.

MEASUREMENTS

VITAL	190			190			SPECIAL	190			190		
	MO	DA	HR	MO	DA	HR		MO	DA	HR	MO	DA	HR
Age✓							a Length of Head✓						
Normal Pulse							b Breadth of Head✓						
1 Weight✓							c Breadth of Shoulders						
2 Height✓							d Breadth of Hips						
3 Trunk Length Episternal							† Height Sitting✓						
BREADTHS							GIRTHS						
4 Chest Con✓							e Chest Con✓						
5 Chest Ex✓							f Chest Ex✓						
6 Waist✓							g R Forearm						
DEPTHES							h L Forearm						
7 Chest Con✓							i R Arm Con						
8 Chest Ex✓							j Left Arm Con						
9 Abdomen							k Right Thigh						
GIRTHS							l Left Thigh						
10 Neck							m Right Calf						
11 Chest 9h rib Con							n Left Calf						
12 Chest 9h rib Ex							Lung Capacity with Cloth'g✓						
13 Waist							STRENGTHS						
STRENGTHS							o Back						
14 Lung Capacity							p Legs						
15 Shoulder Retractors✓													
16 Forearm: R✓													
17 Forearm: L✓													
Pulse after Ex							Copyright 1904 by Wm. W. Hastings						

*This measurement is to be taken only when *clothing is not removed*.

✓ When no clothing, except shoes, coats and vests, is removed during the physical examination the measurements in *heavy type* are recommended.
When clothing is removed during the examination the measurements in the column headed "Vital" are recommended as most important.

*If strength tests can not be taken, let twenty full squats or equivalent be given for exercise.

No.	
a	Full name.....
b	Address.....
c	School.....
I	Vision..... R.....
II	Hearing..... R.....
III	Posture.....
	Shoulders..... Low, R. L. Round..... Sloping.....
	Scapula.....
Thorax	Spine—Scoliosis, C. D. L.....
	Pelvis.....
IV	Skin.....
V	Muscular Function.....
VI	Circulation—Heart.....
	Blood Vessels.....
VII	Respiration.....
VIII	Digestion.....
IX	Nervous Function.....
X	Generative Organs.....
XI	Hernia.....
XII	Injuries and Deformities.....
	The following special observations are inserted for the convenience of those making studies along these lines.
1	Deficiencies—Nervous.....
2	Rate of Movement.....
3	Accuracy of Movement.....
4	Ergographic Record.....
5	Hemoglobin.....
Remarks	

PHYSICAL DIAGNOSIS

School Grade

I	Vision..... R.....	Lordosis.....
II	Hearing..... R.....	Feet.....
III	Posture.....	Legs.....
	Shoulders..... Low, R. L. Round..... Sloping.....	
	Scapula.....	

IV	Skin.....
V	Muscular Function.....
VI	Circulation—Heart.....
	Blood Vessels.....
VII	Respiration.....

VIII	Digestion.....
IX	Nervous Function.....
X	Generative Organs.....
XI	Hernia.....
XII	Injuries and Deformities.....

1 Deficiencies—Nervous.....
 2 Rate of Movement.....
 3 Accuracy of Movement.....
 4 Ergographic Record.....
 Remarks

ABBREVIATIONS: V. G., G., M., P., V. P., Very Good, Good, Medium, Poor, Very Poor; Curvature, C., D., L., Cervical, Dorsal, Lumbar; Scapulae Pr., M., Sl., Pronounced, Medium, Slight.

MEASUREMENTS

VITAL	190			190			SPECIAL	190			190		
	MO	DA	HR	MO	DA	HR		MO	DA	HR	MO	DA	HR
Age							<i>a</i> Length of Head						
Normal Pulse							<i>b</i> Breadth of Head						
1 Weight							<i>c</i> Breadth of Shoulders						
2 Height							<i>d</i> Breadth of Hips						
3 Trunk Length Episternal							GIRTHS						
BREADTHS							<i>e</i> Chest Con						
4 Chest Con							<i>f</i> Chest Ex						
5 Chest Ex							<i>g</i> R Wrist						
6 Waist							<i>h</i> L Wrist						
DEPTHES							<i>i</i> R Forearm						
7 Chest Con							<i>j</i> L Forearm						
8 Chest Ex							<i>k</i> R Arm Con						
9 Abdomen							<i>l</i> L Arm Con						
GIRTHS							<i>m</i> Right Thigh						
10 Neck							<i>n</i> Left Thigh						
11 Chest g rib Con							<i>o</i> Right Calf						
12 Chest g rib Ex							<i>p</i> Left Calf						
13 Waist							<i>q</i> Lung Capacity with clothing						
STRENGTHS							Corset?						
14 Lung Capacity							STRENGTHS						
15 Shoulder Retractors							<i>r</i> Back						
16 Forearm: R							<i>s</i> Legs						
17 Forearm: L													
*Pulse after Ex							Copyright, 1904 by Wm. W. Hastings						

*If strength tests can not be taken, let twenty full squats or equivalent be given for exercise. (Form 100 W)

No.....

PHYSICAL DIAGNOSIS

<i>a</i>	<i>Full Name</i>	.....
<i>b</i>	<i>Address</i>	.....
I	Vision	R.....L.....
II	Hearing	R.....L.....
III	Posture	.....
	<i>Shoulders</i>	Low, R. L.....
	<i>Scapulae</i>	.....
	<i>Thorax</i>	.....
	<i>Spine</i> —Scoliosis, C. D. L.....	Kyphosis, C. D. L.....
	<i>Pelvis</i>	.....
	<i>Feet</i>	.....
IV	Skin	.....
V	Muscular Function	.....
VI	Circulation—Heart	.....
	<i>Blood Vessels</i>	.....
VII	Respiration	.....
VIII	Digestion	.....
IX	Nervous Function	.....
X	Generative Organs	.....
XI	Hernia	.....
XII	Injuries and Deformities	.....
	Remarks	.....

ABBREVIATIONS: V, G, G., M., P., V. P., Very Good, Good, Medium, Poor, Very Poor; Curvature C, D., L., Cervical, Dorsal, Lumbar; Scapulae, Pr., M., SI., Pronounced, Medium, Slight.

PERSONAL AND FAMILY HISTORY.

No.

Name in full.

Your appointment for examination is at M., at the Physical Director's office. Please fill out this blank and bring it with you at that time.

These data are considered strictly private and are asked for in order that you may be given work in the gymnasium that is best suited to you, directions for which will be given later.

Date. 19.....

Birthday, year month day Age in years and months.....

Nationality of paternal grandfather Nationality of paternal grandmother
Nationality of maternal grandfather Nationality of maternal grandmotherResidences of father before your birth
Residences of mother before your birth
Note. Name the towns or cities, stating length of time lived in each.Occupation of father before your birth
Do you resemble your father's or mother's family in physical characteristics?Father died of at years of age.
If living how is his health? How was it before your birth? years of age.Mother died of at years of age.
If living how is her health? How was it before your birth?
Number of brothers and sisters living dead Causes of their deaths 1 2 3
Check all or the following diseases which have been common in your ancestry: DISEASES. Rheumatism, Consumption, Heart Disease, Kidney Disease, Cancer, Nervous Affections, Digestive Troubles, RESIDENCE. State where the first 17 years of your life have been spent, giving your age at each residence: in the city?
suburban town (under 8000 pop.) country town (under 8000) country
e. g.: "city 1-17; or country 1-10, country town 11-17."

SICKNESSES. What diseases have you had? Name all, giving dates and length of time each sickness kept you in bed.

State any ill effects of these sicknesses which remain.

AILMENTS. Is your appetite good?..... Are you ever troubled with indigestion?..... Constipation?.....

Bilious attacks?..... Are you subject to colds—nose, throat or chest?.....

Can you breathe freely through either nostril?..... Are you subject to headaches?.....

Do you have trouble with your eyes?..... Ears?..... Did you ever faint?..... Do you get out of breath easily?.....

Do you sleep well?..... Average number of hours?..... Average number of hours spent in open air each day?.....

What strains, injuries or operations?.....

In what forms have you used stimulants?.....

MENSTRUAL PERIOD. Age when first unwell—Years?.....

How often?..... days. Duration?..... days. Suffering? Severe, Medium, Little, None.

Symptoms? Languid, Headache, Pain. Is study an effort?.....

Do you wheel, dance or take other vigorous exercise during these periods?.....

OCCUPATION (work) since childhood—Mental?..... Physical?.....

CROSS OUT YOUR FAVORITE SPORTS. (Underscore all you have practiced.)

EXERCISE. Lawn Tennis, Golf, Bicycling, Horseback-Riding, Running, Jumping, Fencing, Wrestling, Swimming, Rowing, Skating, Ice and Field Hockey, Walking, Hunting, Bowling, Quoits, Hand-ball, Basket-ball.

What courses in Physical Training have you taken?.....

How much and what exercise are you taking now?.....

NOTE. At this examination the Physical Director will be glad to discuss any further items as to physical condition which you may care to mention.

Remarks.....

Check all the following diseases which have been common in your ancestry:

Rheumatism, Consumption, Heart Disease, Kidney Disease, Cancer, Nervous Affections, Digestive Troubles, Residence. State where the first 17 years of your life have been spent, giving your age at each residence: in the city.....

.....suburban town (under 8000 pop.).....

e.g.: "city 1-17; or country 1-10, country town 11-17."

.....country.....

SICKNESSES. What diseases have you had, name all, giving dates and length of time each sickness kept you in bed.

State any ill effects of these sicknesses which remain.

AILMENTS. Is your appetite good?..... Are you ever troubled with indigestion?..... Constipation?.....

Bilious attacks?..... Are you subject to colds—nose, throat or chest?.....

Can you breathe freely through either nostril?..... Are you subject to headaches?.....

Do you have trouble with your eyes?..... Ears?..... Did you ever faint?..... Do you get out of breath easily?.....

Do you sleep well?..... Average number of hours?..... Average number of hours spent in open air each day?.....

What strains, injuries or operations?

In what forms have you used tobacco?

In what forms have you used stimulants?

What has been your occupation (work) since childhood?..... To what extent?

Cross Out Your Favorite Sports. (Underscore all you have practiced.)

Lawn Tennis, Golf, Bicycling, Horseback-Riding, Running, Jumping, Baseball, Foot-ball, Pole Vaulting, Shot, Hammer, Rings, Fencing, Wrestling, Swimming, Rowing, Skating, Ice and Field Hockey, Walking, Hunting, Bowling, Quoits, Tumbling, Hand-ball, Basket-ball

What games do you like best?

What courses in Physical Training have you taken?

How much and what exercise are you taking now?

Note. At this examination the Physical Director will be glad to discuss any further items as to physical condition which you may care to mention.

Remarks.....

PERSONAL AND FAMILY HISTORY.

Where it becomes necessary for parents to fill out this blank will they be kind enough to return it the day following that on which it is sent. See "note" below.

No. Name in full..... Your appointment for examination is.....

Physical Director's office. Please fill out this blank and bring it with you at that time.

These data are considered strictly private and are asked for in order that you may be given work in the gymnasium that is best suited to you, directions for which will be given later.

Date..... 19.....

Birthday, year..... month..... day..... Age in years and months.....

Nationality of father's father..... Nationality of father's mother.....

Nationality of mother's father..... Nationality of mother's mother.....

Residences of father before your birth.....

Residences of mother before your birth.....

Note. Name the towns or cities, stating length of time lived in each.

Occupation of father before your birth.....

Physical characteristics—most like father or mother?..... How?.....

Health of father?..... If dead, died of.....

Health of mother?..... If dead, died of.....

Health of sisters and brothers?..... Number living?..... Number dead?.....

Causes of their deaths 1..... 2..... 3..... 4.....

TO PARENTS:

Your co-operation is desired in obtaining size, strength and rate of growth of the children of this community. Kindly make your replies as complete as possible. We wish to assure parents that,

1. No names of children will be published in connection with individual measurements.

2. No personal defects or deformities will be pointed out before other children measured.

3. The point of view of the measurements is purely the good of the child.

The object of this examination is to learn the physical condition of children in order that this may form the basis for their physical training.

DIRECTOR'S
SPECIAL PRESCRIPTION

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